

NOTES AND NEWS.

MR. FREDERICK LE ROY SARGENT has a series of articles on the pollination of orchids in the recent numbers of the *Popular Science News*.

MR. T. H. KEARNEY, JR., has been appointed to the curatorship of the Columbia College herbarium, as successor to Dr. Morong, deceased.

BOKORNY has shown experimentally (Archiv. f. Hyg. 20:—1894) that chlorophyll-bearing aquatic plants are highly efficient in purifying natural waters containing sewerage.

IN THE ANNUAL REPORT of the Connecticut Station for 1893 Dr. W. C. Sturgis gives (pp. 72-111) information about many plant diseases with much helpful matter relating to treatment.

PEACH YELLOWS AND ROSETTE are ably described and discussed by Dr. Erwin F. Smith in a twenty page bulletin from the U. S. Department of Agriculture, no. 17 of the farmers' series.

THE SECOND ANNUAL REPORT of the Ohio Academy of Science is a pamphlet of 52 pages. It includes seventeen short papers or abstracts relating to botany, several of which are lists of Ohio plants.

A SCIENCE CLUB has been organized at Indianapolis, Ind., to promote local interest in scientific subjects and foster good fellowship among resident scientists. Pleasant club rooms have been secured in the Denison Hotel. Mr. John S. Wright is the present secretary.

MATERIAL FOR CLASS use, both alcoholic and dry, and also some living material, can be obtained of the Cambridge Botanical Supply Co. This will prove a great service to many teachers who prefer to buy rather than to collect, or who need some special sorts to complete their list.

IN RECENT NUMBERS of the *Beihefte zum Botanischen Centralblatt* Dr. A. Zimmermann has gathered together the recent literature relating to the plant cell and has presented a summary of the more important contributions. This supplements his work *Die Pflanzenzelle*, and brings information up to date in a most useful manner.

BACTERIUM ZOPFII has been found by Boyce and Evans to be strongly apogeotropic when grown in nutrient gelatine (Centr. f. Bakt. u. Par. 15: 568), and by Beyerinck to be thermotropic (ibid, 799). The last investigator suggests that the sensitiveness to warmth doubtless enables the organism to more readily penetrate the animal body, for it is parasitic upon the domestic fowl.

A CRITICAL NOTICE of Mr. Ganong's paper on the absorption of water by the green parts of plants (this journal, ante, p. 136) appears in *Agricultural Science* for March (recently issued), written by Mr. J. Christian Bay. The methods employed are severely criticised, after

which a résumé of the literature of the subject is given, extending from the time of Mariotte and Bonnet to the present.

A NEW YEAST has been found by M. W. Beyerinck (Centr. f. Bak. u. Par., 16: 49-58. 1894) upon Zante currants. It is called *Schizosaccharomyces octosporus*, the genus containing only one other species, an east African form. As the name indicates, it forms eight spores in a cell. It is capable of fermenting glucose and maltose, but not sucrose, lactose or arabinose. It makes but feeble growth in a solution of cane sugar.

VEGETAL PARASITISM among insects is the subject of a paper of nineteen pages and three plates in the Quarterly Journal of Proceedings for April of the Columbus (Ohio) Horticultural Society, written by Prof. F. M. Webster. It includes much valuable personal observation and experiments. A classified list of entomophytes of the families Hypocreaceæ and Entomophthoraceæ enumerates 87 species of fungi with their insect hosts and distribution.

THE CARD INDEX of genera, species and varieties of plants published since 1885, prepared by Miss Josephine A. Clark of Washington, has met with much favor. The series is carefully prepared and can not fail to be of great assistance to any working botanist. All classes of plants are included. There are between one and two hundred cards of fungi in each thousand, and for the convenience of mycologists it has been proposed that these be also issued separately. Miss Clark has consented to this proposition, if a number of mycologists will send in their subscriptions soon. The separate index of fungi will be sold at the rate of \$1.75 per hundred cards.

AN EXPEDITION through eastern Africa for the collection of natural history specimens, and to secure photographs, will start from Pretoria, South African Republic, about August 1st, and passing through Matabeleland, the extreme western portion of the East African Portuguese possessions, and along the western coast of Lake Nyassa, will reach Zanzibar after about twelve months. Although all kinds of material of a scientific character will be collected, plants and insects will receive the chief attention. Sets of either of these are offered at \$10.00 per century. Those desiring to place orders should address The Kaessner Expedition, care of Imperial German Consulate, Zanzibar, East Africa.

A VERY SATISFACTORY enumeration of the departments into which the science of botany is at present divided (although exceptions may be taken to the nomenclature) is given by Prof. W. F. Ganong in a communication to the New Brunswick Natural History Society, published in the June number of the *Educational Review* of St. John, under the caption "An outline of phytobiology." He makes eleven chief departments, as follows: I. systematic botany, II. phyto-anatomy, III. phyto-morphology, IV. phyto-physiology, V. phyto-pathology, VI. economic botany, VII. botanical geography, VIII. phyto-palæontology, IX. folk botany, X. philosophical botany, XI. phytobiology. The author points out that the amateur can do little to advance the science in departments II, IV and X, that he can do some small service in III, V, VI, VII and VIII; and very important service in I, IX and XI. The object

of the paper is to promote the biological study of Acadian plants by local botanists, but it will interest and benefit other American botanists as well.

BULLETINS FROM THE EXPERIMENT STATIONS for the last month show more than the usual diversity of subjects. Spraying to destroy insects and fungi by S. T. Maynard (Hatch, Mass. no. 25) includes results of the application of Bordeaux mixture upon poplar rust (*Melampsora*), with two fine plates. Cotton-boll rot by J. M. Stedman (Ala. no. 55) details the study of a new disease of cotton affecting the seeds, lint and bolls, caused by bacteria, with one plate. Second report on rusts of grains by A. S. Hitchcock and M. A. Carleton (Kan. no. 46) gives valuable experimental studies of *Puccinia graminis* and *P. rubigo-veria*. The conclusion is reached that the latter persists through the winter in wheat plants in the mycelial condition, but that the former does not; that rusts of the same species upon different hosts are races which can not be transferred from one kind of host to another, i. e. *P. graminis* on oats will not infect wheat, etc.; and that spraying for rust on cereals is possible but not practical. Noxious weeds by E. S. Goff (Wis. no. 39) treats of the ten weeds of the Wisconsin weed law, and also of Russian thistle, with illustrations. Some recent Chinese vegetables by L. H. Bailey (Cornell N. Y. no. 67) gives an interesting account of a number of cultivated plants, with their Chinese names, and illustrations.

ACONITUM UNCINATUM is found by David F. Day (*Meehan's Monthly*, 4: 117. Ag 1894) to be an intermittent twiner, as it makes one or two turns about a support, then grows straight for a few inches, when it again makes a turn or two, thus attaining a height of six or seven feet. The fact that the species twines was recorded by Elliott in his sketch of the botany of the Carolinas, 2: 20, but its intermittent character has not before been observed. Plants of this species and of *A. Noveboracense* have been grown by Mr. Day in his garden, and their habits carefully watched. The latter species shows no tendency to twine.